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## WATER SUPPLY OUTLOOK FOR ARIZONA

OCTOBER 1, 1983

The outlook for the 1984 water supply in Arizona is very favorable. If weather conditions are near normal, the state can expect above average surface water supplies over the next year. This outlook is based on the past water year conditions and the status of water supplies near October 1, 1983.

### Weather Conditions: Spring-Summer 1983

The spring period April through June was generally cooler than normal with the exception of a hot spell the last week of May. As a result, the melting of the mountain snow pack was delayed. Streamflow was more evenly distributed over the spring months than it normally would have been. Near normal precipitation occurred in April and was distributed evenly throughout the month, but May and June were very dry.

July began with cooler than normal temperatures but quickly changed to much above normal before the first week was finished. Temperatures were closer to normal the rest of the month. The summer monsoon began by July 7. Thunderstorms became common over the state, particularly in the southeastern area and the White Mountains. Locally heavy rain fell in the 1" to 2" range, as well as many areas receiving lesser amounts.

August began with above normal temperatures, then settled in to alternating periods of near normal to below normal temperatures. The monsoon condition continued with thunderstorm activity common throughout the month. In mid month severe storms hit the state with ensuing wind damage and local flooding. A tornado was reported in Phoenix. September began with seasonably hot weather, but began a normal cooling trend by the end of the month. The monsoon condition persisted with relatively high humidity and thunderstorms. Prescott received 5.25 inches of precipitation on the 23rd and 24th, which produced serious local flooding.

### General Water Conditions: Spring-Summer 1983

The general water supply in Arizona and southwestern New Mexico was good over the spring and summer of 1983. Reports from 20 Soil Conservation Service offices verify that there were few serious water shortages in this region. Those shortages that were recognized were generally local in nature and were a normal occurrence. Where major reservoirs were available, water supplies were sufficient. Small impoundments were generally adequate with exceptions noted in southeastern Arizona, the Snowflake area, the area around Window Rock on the Navajo Reservation, and the eastern part of Grant County, New Mexico.

Hauling of water was necessary over many parts of northern and southeastern Arizona, particularly where small ponds and stock tanks did not maintain a sufficient supply. This is a common practice.

Pumped ground water was in sufficient supply and was commonly used over the entire state. Ground water was used as a sole source and also to supplement reservoir and pond storage in some areas.

Only two areas reported changes in crop acreage due to water supplies. The Springerville area had an increase in irrigated acreage and the Window Rock area reported a decrease.

Where direct stream diversion was a usual water source, supplies were above average, but still not adequate in some areas. Water users along the Gila River had sufficient supplies, but shortages were reported in the areas around Kingman, Fredonia, Window Rock, and on the Mimbres River in New Mexico. No shortages occurred along the Colorado River.

Range conditions were good in almost all areas where summer grazing was practiced. Fair conditions were reported around Douglas, Tuba City, and Snowflake. In the vicinity of Safford grazing ranged from poor to good. Poor conditions were reported in eastern Grant County in New Mexico, while the western part of the county was good to excellent. Generally good grazing conditions were reported in Catron County. The summer monsoon helped to keep the ranges in good condition.

Energy costs affected the amount of water used in several areas of Arizona. This condition was reported in Cochise and Maricopa Counties, the Prescott area, Fredonia and Window Rock.

Other special problems reported included the rising ground water table along the Colorado River due to the sustained high flow. This condition poses problems in local flooding, drainage, and soil salt accumulations as well as health considerations.

Restrictions in ground water use due to the 1980 Arizona ground water law have been reported.

Although not a result of available water supply, the President's Payment in Kind program has caused a reduction in acreage planted in some areas, thus reducing the amount of irrigation water used.

Shortages in domestic water supplies were reported on portions of the Navajo Reservation.

#### Streamflow: Spring-Summer 1983

Streamflow remained above average on most major rivers in Arizona through July. Since precipitation in May and June was very light, much of this runoff was due to the melting of the above average snowpack which accumulated over the winter months. In August and September flow had decreased generally to the average to below average range.

Individual streams experienced high flows in response to thunderstorm activity and many cases of local flooding were reported in August and September. These were in general short duration events.

The following table illustrates the streamflow patterns within the state.



Streamflow - Percent of Average - 1983  
(Based on Average of Period 1961-1980)

	<u>April</u>	<u>May</u>	<u>June</u>	<u>July</u>	<u>Aug</u>	<u>Sept</u>
Salt River	194%	262%	167%	200%	131%	97%
Tonto Creek	303%	307%	300%	146%	58%	115%
Verde River	189%	197%	150%	136%	100%	76%
Gila-Virden	314%	253%	334%	117%	55%	---
Gila-Solomon	344%	342%	356%	149%	73%	---
San Francisco-Clifton	326%	282%	264%	127%	72%	---

The flooding condition which began in June on the Colorado River still persists and all indications are that it will continue. The reservoir releases which produced the flooding were in response to a record streamflow on the Colorado River this year. As of September 27, 1983, 37,800 cubic feet per second was being released from Lake Havasu into the lower Colorado River. The release from Lake Powell into the Grand Canyon was 28,000 cubic feet per second.

Reservoir Storage - near October 1, 1983

Nearly all major reservoirs or reservoir systems in Arizona have much above average storage for October 1. The combined storage of the six Salt River Project reservoirs is 1,678,000 acre feet which is 83% of capacity. San Carlos Reservoir is at 58% of capacity with 547,300 acre feet. Lake Pleasant contains 117,700 acre feet, being 75% full. The four major reservoirs on the Colorado River hold a total storage of 52,796,700 acre feet, or 98% of capacity. There are 30,500 acre feet remaining in Painted Rock Reservoir. No releases are being made at present into the Gila River from Painted Rock.

